

Application No. 10/782,043

Response to Non-Final Office Action of September 28, 2007

Amendments to the Claims

The Listing of Claims (pages 4–12) replaces all prior Listings of Claims in the application.

All prior claims 1–37 have been canceled without disclaimer.

New claims 38–51 have been added to the Listing of Claims to more clearly define the invention.

Claims 38–51 are now pending.

Listing of Claims:

Claims 1-37 (Canceled)

38. (New) An electronic game system in which a first handheld game unit is communicatably linked to a separately housed second handheld game unit, said first handheld game unit comprising:
- (a) a processor for generating polygon vertex data that represents shapes of a player-controlled 3-dimensional first simulated object moving in a first 3-dimensional simulated game space in response to manual operation of said first handheld game unit;
 - (b) a processor for rendering said polygon vertex data as first pixel data that represents an image of said first simulated object from a variable first viewpoint in said 3-dimensional game space and for rendering said polygon vertex data as second pixel data that represents an image of said first simulated object from a variable second viewpoint that is displaced from said first viewpoint by a variable angle in said game space;
 - (c) said variable angle varying in response to manual operation of said first handheld game unit such that said first and second pixel data simulate player-controlled variable viewing depth;
 - (d) a first autostereoscopic discrete display device that displays said first and second pixel data as corresponding left and right interlaced images for stereoscopic viewing;

- (e) a data transmitter in said first handheld game unit for initiating transfer of first digital data through a data transmission link to said second handheld game unit, said first digital data specifying variables of said first simulated object in said 3-dimensional game space;
- (f) a data receiver in said first handheld game unit for receiving second digital data through a data transmission link from said second handheld game unit;
- (g) said second digital data specifying variables of a player-controlled second simulated object moving in response to manual operation of said second handheld game unit for autostereoscopic display on a second discrete display device in said second handheld game unit;
- (h) a processor in said first handheld game unit for rendering said polygon vertex data as third and fourth pixel data that represent images of said second simulated object moving in accordance with said received second digital data and rendered from corresponding variable third and fourth viewpoints in said 3-dimensional game space, said variable fourth viewpoint being displaced from said first, second, and third viewpoints by variable angles in said 3-dimensional game space;
- (i) said first autostereoscopic discrete display device in said first handheld game unit displaying said third and fourth pixel data as corresponding left and right interlaced images of said second simulated object moving in response to manual operation of said second handheld game unit; and

(j) wherein said first simulated object controlled by manual operation of said first handheld game unit and said second simulated object controlled by manual operation of said second handheld game unit are both displayed autostereoscopically on said first and second handheld game units from different viewpoints.

39. The game system of claim 38, wherein said processors in said first handheld game unit are the same processor.

40. The game system of claim 38, wherein said processors in said first handheld game unit comprise a first processor and a graphics coprocessor.

41. The game system of claim 38, wherein transparency of said parallax barrier is controlled by one of said processors to enable electrically switchable monoscopic and stereoscopic displays.

42. The game system of claim 38, wherein said discrete display device comprises a lenticular optic device.

43. The game system of claim 38, wherein said first and second viewpoints are displaced by a variable player-controlled angle and said first simulated object is rendered with a corresponding size to simulate player-controlled viewing depth.

44. The game system of claim 38, further comprising a manually operable control device in said first handheld game unit that generates control data that causes said first simulated object to move in a sequence of 3-dimensional spatial coordinates in said game space, wherein said control device is any from the group comprising: touchpad, touchscreen, joystick, direction switch, motion sensor, and a combination thereof.
45. The game system of claim 38, further comprising a motion sensor for manual player-controlled operation of said first handheld game unit.
46. The game system of claim 38, wherein said discrete display device is a liquid crystal display (LCD) device.
47. The game system of claim 38, wherein said variables specified by said second digital data are from the group consisting of 3-dimensional coordinates of said first simulated object, data identifying said first simulated object, data representing a 3-dimensional direction of motion of said first simulated object, and data identifying a predetermined animated action of said first simulated object.

48. (New) An electronic game system in which a first handheld game unit is communicatably linked to a separately housed second handheld game unit, said first handheld game unit comprising:
- (a) a processor for generating polygon vertex data that represents shapes of a player-controlled 3-dimensional first simulated object moving in a first 3-dimensional simulated game space in response to manual operation of said first handheld game unit;
 - (b) a processor for rendering said polygon vertex data as first pixel data that represents an image of said first simulated object from a variable first viewpoint in said 3-dimensional game space and for rendering said polygon vertex data as second pixel data that represents an image of said first simulated object from a variable second viewpoint that is displaced from said first viewpoint by a variable angle in said game space;
 - (c) said variable angle varying in response said first handheld game unit such that said first and second pixel data simulate variable viewing depth;
 - (d) a first autostereoscopic discrete display device that displays said first and second pixel data as corresponding left and right interlaced images for stereoscopic viewing;
 - (e) a data transmitter in said first handheld game unit for initiating transfer of first digital data through a data transmission link to said second handheld game unit, said first digital data specifying variables of said first simulated object in said 3-dimensional game space;

- (f) a data receiver in said first handheld game unit for receiving second digital data through a data transmission link from said second handheld game unit;
- (g) said second digital data specifying variables of a player-controlled second simulated object moving in response to manual operation of said second handheld game unit for autostereoscopic display on a second discrete display device in said second handheld game unit;
- (h) a processor in said first handheld game unit for rendering said polygon vertex data as third and fourth pixel data that represent images of said second simulated object moving in accordance with said received second digital data and rendered from corresponding variable third and fourth viewpoints in said 3-dimensional game space, said variable fourth viewpoint being displaced from said first, second, and third viewpoints by variable angles in said 3-dimensional game space;
- (i) said first autostereoscopic discrete display device in said first handheld game unit displaying said third and fourth pixel data as corresponding left and right interlaced images of said second simulated object moving in response to manual operation of said second handheld game unit; and
- (j) wherein said first simulated object controlled by manual operation of said first handheld game unit and said second simulated object controlled by manual operation of said second handheld game unit are both displayed autostereoscopically on said first and second handheld game units from different viewpoints.

49. (New) A computer readable data storage medium for use with an electronic game system in which a first handheld game unit is communicatably linked to a separately housed second handheld game unit, said data storage medium storing executable game program instructions comprising:
- (a) instructions that cause said first game unit to generate polygon vertex data that represents shapes of a player-controlled 3-dimensional first simulated object moving in a first 3-dimensional simulated game space in response to manual operation of said first handheld game unit;
 - (b) instructions that cause said first game unit to render said polygon vertex data as first pixel data that represents an image of said first simulated object from a variable first viewpoint in said 3-dimensional game space and to render said polygon vertex data as second pixel data that represents an image of said first simulated object from a variable second viewpoint that is displaced from said first viewpoint by a variable angle in said game space;
 - (c) said variable angle varying in response to manual operation of said first handheld game unit such that said first and second pixel data simulate player-controlled variable viewing depth;
 - (d) instructions that cause said first game unit to display said first and second pixel data as corresponding left and right images on a first autostereoscopic discrete display device in said first game unit;

- (e) instructions that cause said first game unit to initiate transfer of first digital data through a data transmission link to said second handheld game unit, said first digital data specifying variables of said first simulated object in said 3-dimensional game space;
- (f) instructions that cause said first game unit to process second digital data received through a data transmission link from said second handheld game unit;
- (g) said second digital data specifying variables of a player-controlled second simulated object moving in response to manual operation of said second handheld game unit for autostereoscopic display on a second discrete display device in said second handheld game unit;
- (h) instructions that cause said first game unit to render said polygon vertex data as third and fourth pixel data that represent images of said second simulated object moving in accordance with said received second digital data and to render from corresponding variable third and fourth viewpoints in said 3-dimensional game space, said variable fourth viewpoint being displaced from said first, second, and third viewpoints by variable angles in said 3-dimensional game space;
- (i) instructions that cause said first game unit to stereoscopically display said third and fourth pixel data as corresponding left and right interlaced images of said second simulated object moving in response to manual operation of said second handheld game unit; and

(j) wherein said first simulated object controlled by manual operation of said first handheld game unit and said second simulated object controlled by manual operation of said second handheld game unit are both displayed autostereoscopically on said first and second handheld game units from different viewpoints.

50. (New) The data storage medium of claim 49, wherein said data storage medium is from the group comprising: an optically coded medium, a semiconductor memory, and a magnetic data storage medium.

51. (New) The data storage medium of claim 49, wherein said data storage medium is a writable data memory into which said game program instructions are downloaded from a separately housed system.